REMARKS

The present document is submitted in reply to the final Office Action dated August 6, 2009 ("Office Action").

Initially, Applicants would like to thank the Examiner for speaking to their counsel over the phone on August 12, 2009 to discuss this case. A summary of the interview is provided below.

Applicants have amended claim 14 to promote clarity and claim 45 to more particularly point out the subject matter they deem as their invention. Support for the amendments can be found in the specification at page 5, lines 7-8, and page 6, lines 11-12, and in original claim 15. The amendments to claim 45 have necessitated cancellation of claims 46, 49, and 50. No new matter has been introduced.

The amendments should be entered as they raise no new issues that will require further consideration or search and also do not touch the merits of the application within the meaning of 37 C.F.R. § 1.116(b).[1]

Upon entry of the above-proposed amendments, claims 14-16, 18-20, 31-36, 45, 47, and 48 will be pending and under examination. Applicants respectfully request that the Examiner reconsider this application in view of the following remarks.

Interview Summary

Applicants pointed in their Reply to Office Action filed April 16, 2009 ("Reply") a difference between the claimed invention and the two cited references, i.e., Seidman et al. and Skory et al. Namely, the claimed invention requires growing a microorganism directly (i.e., **without addition of other nutrients**) in a glucose-rich syrup, obtained

[1] Previously presented claim 14 requires producing a glucose-rich syrup by a dual-enzyme process and then "growing a microorganism in **the** glucose-rich syrup to produce a fermentation product." The article "**the**" indicates that the glucose-**rich** syrup used in the growing step refers to the syrup obtained from the dual-enzyme process. In other words, just as pointed out in Applicants' Reply to Office Action filed Apr. 16, 2009, claim 14 requires use of this glucose-rich syrup **directly** or **as is** (i.e., without addition of other nutrients) for culturing a microorganism. Following the Examiner's request (see "Interview Summary" below), Applicants have incorporated into this claim the phrase "**as is**," which merely promotes clarity. Turning to claim 45, Applicants have amended this claim to substitute "105 mg/ml or 114 mg/ml" for "105-114 mg/ml," which the Examiner deems as new matter, and to incorporate the limitation of previously presented claim 46, which has been considered by the Examiner. Clearly, the amendments to both claims 14 and 45 raise no new matter that will require further consideration or search. Applicants therefore respectfully request entry of these amendments.

from a dual-enzyme process, to produce a fermentation product, while neither cited reference suggests this growing step. See the Reply, pages 7-8. The Examiner states in the Office Action that "[n]owhere in the specification indicates that the meaning of 'directly' is interpreted as without any other nutrients." See the Office Action, page 3, third paragraph.

During the telephone interview, Applicants' counsel brought to the Examiner's attention that his statement quoted above is incorrect as the specification explicitly teaches use of the glucose-rich syrup **as is**, i.e., **without addition of other nutrients**, for growing a microorganism. See the specification, page 5, lines 7-9. Applicants' counsel further pointed out that this growing step renders the claimed invention patentable over the cited references. The Examiner agreed with Applicants' position but required amending independent claim 14 to make it clear that no additional nutrients are added in the growing step. For the sole purpose of accelerating prosecution, Applicants have followed the Examiner's suggestion.

Rejection under 35 U.S.C. § 112, First Paragraph (Written Description)

Claims 45, 47, and 48 are rejected for failing to meet the written description requirement on two grounds. See the Office Action, pages 6-8.

First, the Examiner deems the glucose concentration range "105-114 mg/ml" recited in claim 45 lacking support in the specification. For the sole purpose of promoting prosecution, Applicants have replaced the glucose concentration range at issue with two individual glucose concentrations, i.e., "105 mg/ml or 114 mg/ml." As acknowledged by the Examiner, these two concentrations are disclosed in the specification, Examples 1 and 4. See the Office Action, page 7, third and fourth paragraphs.

Second, the Examiner asserts that, according to the specification, the glucose-rich syrup recited in claim 45, i.e., having a glucose concentration of 105 mg/ml or 114 mg/ml, is produced using alpha-amylase and glucoamylase, two particular starch hydrolyzing enzymes. See the Office Action, page 7, fifth paragraph. He then concluded that claim 45, requiring use of any two starch hydrolyzing enzymes to produce the just-

mentioned glucose-rich syrup, has no support in the specification. Again, to promote prosecution, Applicants have amended this claim to specify that alpha-amylase and glucoamylase are used to produce a glucose-rich syrup having the specified glucose concentration.

In view of the above remarks, Applicants submit that the amendments to claim 45 have obviated the Examiner's two grounds for rejection. As claims 47 and 48 are rejected solely due to their dependency to claim 45, the amendments to claim 45 have also overcome the rejection of these two claims.

Rejection under 35 U.S.C. § 103

Claims 14-16, 18-20, 31-36, and 45-50 are rejected as obvious over Seidman et al., in view of Skory et al. Claims 46, 49, and 50 have been cancelled.

Claim 14 will be discussed first. This claim covers preparation of a fermentation product by treating a starch-containing produce with two starch-hydrolyzing enzymes to obtain a glucose-rich syrup and growing a microorganism in **the** glucose-rich syrup to produce a fermentation product. As pointed out above (see footnote 1), the article "**the**" indicates that the microorganism is grown in the syrup **as is without addition of other nutrients**. To promote clarity, Applicants have amended claim 14 to recite "growing a microorganism in the glucose-rich syrup **as is** to produce a fermentation product."

As also pointed out above (see "Interview Summary"), Applicants brought to the Examiner's attention in their Reply that neither Seidman nor Skory suggests the growing step recited in amended claim 14. Applicants elaborate on this point below.

Seidman teaches a dual-enzyme process for converting starch to low molecular weight-saccharides such as dextrose and maltose. See column 3, lines 51-54. It is commonly known that starch is a polysaccharide composed of a number of glucose units joined together by glycosidic bonds. In view of this common knowledge, a skilled person in the art would have known that the product obtained from Seidman's dual-enzyme process, which uses starch as the starting material, contains only low molecular weight sugars (a carbon source). As microorganisms require various nutrients (e.g., a nitrogen source) to grow, a skilled artisan would have also known that the Seidman product,

containing only sugar, CANNOT be used to grow a microorganism without addition of other nutrients as it lacks other nutrient sources necessary for microorganism growth. In short, Seidman does not suggest growing a microorganism in a product obtained from Seidman's dual-enzyme process **without addition of other nutrients**, as required by claim 14.

According to the Examiner, Skory teaches "a fermentation process of simple sugars (glucose) using Aspergillus oryzae to product ethanol ..." See the Office Action, page 9, third paragraph. This reference also teaches growing microorganisms in a medium containing various nutrient sources other than sugars. See page 203, right column, last paragraph ["Nineteen *Aspergillys* and ten *Rhizopus* 9see Tables 1 and 2] were grown on YPM (0.3% yeast extract, 0.5% peptone, and 0.3% malt extract) supplemented with glucose, xylose, cellobiose, or cellulose ...."] Clearly, Skory would have discouraged a skilled artisan from growing a microorganism in a medium containing only sugar, e.g., the Seidman product. In other words, this reference does not cure the deficiency of Seidman.

Taken together, as none of Seidman and Skory suggests the growing step recited in amended claim 14, their combination clearly does not render this claim obvious. Nor does it render obvious claims 15, 16, 18-20, 31-36, 45, 47, and 48, all of which depend from claim 14.

CONCLUSION

For the reasons set forth above, Applicants submit that the present application is now in condition for allowance. A favorable consideration is therefore respectfully solicited.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any

claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

No fee is believed to be due. Please apply any charges to Deposit Account No. 50-4189, referencing Attorney Docket No. 70002-104001.

Respectfully submitted,

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